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VIA HAND DELIVERY

Ms. Magalie Roman Salas
Secretary
Federal Communications Commission
Room Number TW-A325
445 12th Street, S.W.
Washington, DC, 20554

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Re: Sprint Corporation and MCI WorldCom, Inc. --CC Docket No. 99-333

Dear Ms. Salas:

Attached hereto is a Declaration by John Preston responding to the Declaration of Professor Nicholas S. Economides submitted to the Federal Communications Commission on March 20, 2000 on behalf of MCI WorldCom and Sprint. Please place the attached letter and Declaration in the public record for the above-referenced proceeding.

Please direct any questions to the undersigned.

Respectfully submitted,

Aryeh S. Friedman /ha

Aryeh S. Friedman

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Declaration of John H. Preston

**An Antitrust Economic Analysis of the Proposed Merger of the Internet
Backbone Businesses of MCI WorldCom and Sprint**

Economists Incorporated

May 26, 2000

I. Introduction

1. My name is John Preston. I have been asked by British Telecommunications and AT&T to provide an economic analysis of the antitrust issues raised by the proposed acquisition of the Internet backbone business of Sprint by MCI WorldCom. In this Declaration, I focus on the arguments presented by Professor Nicholas S. Economides in his Declaration (Economides Declaration) that was submitted to the Federal Communications Commission (FCC) on March 20, 2000 on behalf of MCI WorldCom and Sprint. I have also been asked to provide an analysis of the remedy appropriate to resolve any competitive problems raised by the merger of the two Internet backbone businesses.
2. I have been a professional economist since 1975. I was employed as an economist at the Antitrust Division of the Department of Justice for 10 years and, since 1985, I have been employed at Economists Incorporated, a firm that specializes in antitrust and regulatory analysis. I am currently Senior Vice President of Economists Incorporated. While at Economists Incorporated, I have provided economic analyses on a number of telecommunications matters including the following: the BT/AT&T Global Venture, BT/MCI I, BT/MCI II, the Qwest/U S WEST merger, direct access to INTELSAT in the U.S. by foreign Signatories, the acquisition of ConTel (including its satellite business) by GTE, and the sale of the GTE satellite business to GE Americom. I received my graduate training in economics at the University of Michigan with a specialization in industrial organization. A copy of my curriculum vitae is attached as Exhibit A.
3. In preparing this declaration, I relied on a number of sources relevant to the issues I have been asked to address, including the following: (1) filings by the merging parties and other interested parties before the FCC; (2) discussions with managers at BT and AT&T responsible for Internet operations; (3) articles in the trade press; (4) studies prepared by telecommunications consulting firms; (5)

economics articles on network economics and the economics of the Internet; (6) the decisions by the European Commission (EC), Department of Justice (DOJ), and the Federal Communications Commission (FCC) to oppose the merger of Internet backbone businesses of MCI and WorldCom; and (7) reports by economists filed in the MCI/WorldCom¹ case addressing the antitrust implications of the merger of the Internet backbone businesses.

II. Summary of Opinions

4. On the basis of my analysis of the antitrust issues raised by the proposed combination of the Internet backbone assets of MCI/WorldCom and Sprint, I have reached the following opinions:

- The relevant product market could conservatively be described as a national backbone market served by nationwide backbones. Alternatively, it may be reasonable to narrow the relevant market to a national backbone market served by a “core” set of national backbones. As a practical matter, this distinction will make little difference in the calculation of market shares. The relevant geographic market is at least the U.S. and may be world-wide.
- A merger of MCI WorldCom and Sprint would create a firm with a large installed base of end user customers (“eyeballs” as well as content providers) both in absolute terms and relative to other providers. Based on a number of estimates, the combined firm’s market share is likely greater than 50 percent.
- With its large installed base of customers, the combined firm would have both the incentive and ability to exercise market power in the provision of

¹ In this declaration, “MCI/WorldCom” refers to MCI and WorldCom prior to the completion of

Internet backbone services by raising price above competitive levels or reducing the quality of interconnection below competitive levels.

- In my opinion, Professor Economides did not adequately analyze the competitive effects of the proposed merger for the following reasons:
 - a. The key issue in this case is whether the large installed base of customers will permit MCI WorldCom/Sprint to exercise market power in the provision of Internet backbone services. Professor Economides does not directly confront this issue.
 - b. Professor Economides does not define a relevant market nor does he calculate market shares. To assess the impact of the installed base of the merged firm on competition, the first steps are market definition and the calculation of market shares. By not taking these steps, Professor Economides sidesteps the competitive significance of the installed base of customers of the merged firm.
 - c. Professor Economides claims that the necessary conditions are not present for the exercise of market power by providers of Internet backbone services. In my opinion, the economic literature supports my conclusion that the proposed merger is likely to have anticompetitive effects. In particular, a firm with a large enough share in this network industry relative to other firms would have the incentive and ability to raise price above competitive levels and to reduce the quality of interconnection. Reducing the quality of interconnection would make other firms less compatible with the dominant firm.

their merger, whereas “MCI WorldCom” refers to the post-merger entity.

- d. Professor Economides claims that other firms will be able to avoid any attempt by the merged entity to exercise market power by switching to alternative suppliers of Internet backbone services. My analysis shows that with a large installed base, customers are much more likely to switch to the dominant provider than from the dominant provider, even if the dominant provider exercises market power.
- e. The MCI/WorldCom case was settled just two years ago. With very similar facts, the competition authorities in Europe and the U.S. determined that the combination of MCI's and WorldCom's Internet backbone businesses would likely lead to anticompetitive effects. The theories and analyses relied upon by the competition authorities in the MCI/WorldCom case contradict Professor Economide's conclusions in the present case.
- The appropriate remedy to resolve the competitive problems raised by this merger would be the divestiture of the UUNET Internet backbone. A divestiture of the Sprint Internet backbone would be an inadequate remedy due to the more extensive integration of the Sprint Internet backbone business with the other telecommunications businesses of the surviving parent.

III. The Relevance of the MCI/WorldCom Case

- 5. The facts and antitrust issues raised by the proposed acquisition of Sprint's Internet backbone business by MCI WorldCom are quite similar to the facts and issues raised by the proposed acquisition of MCI's Internet backbone business by WorldCom just two years ago. In both cases, the leading Internet backbone provider proposed to buy the second leading Internet backbone provider, which,

- opponents have argued, threatened to create a dominant provider with the incentive and ability to exercise market power.
6. In MCI/WorldCom, proponents and opponents of the merger made presentations to the European Commission, the Department of Justice and the Federal Communications Commission. The employees of these competition authorities (commissioners, attorneys, economists and other employees) evaluated the arguments and evidence presented by both sides and other evidence that the agencies were able to develop. As a result of their investigations, the competition authorities determined that the proposed merger was anticompetitive and required MCI/WorldCom to divest MCI's Internet backbone business as a condition of merging their other businesses. The agencies accepted the arguments presented by the opponents of the merger and rejected the arguments made on behalf of MCI and WorldCom. The decisions and underlying analyses of the agencies in the MCI/WorldCom merger create a strong presumption that the current merger is anticompetitive given the great similarity between the relevant facts and antitrust issues raised in the two cases.²
 7. Sprint, which now proposes to join its Internet backbone business with that of MCI WorldCom, strongly opposed the combination of the Internet backbone businesses of MCI and WorldCom. Sprint retained economists Stanley Besen, Padmanabhan Srinagesh, and John Woodbury (Besen, et al.) to analyze the competitive effects of the MCI/WorldCom merger.³ They identified a hierarchy of Internet service providers and concluded that the relevant market was the provision of Internet backbone services by "core" providers that sit at the top of

² In recent FCC filings, a number of parties noted the strong parallels between the MCI/WorldCom case and the present case. See, for example, submissions by Cable & Wireless at 17-19, including an economic analysis by Dr. Alan Pearce at 24-27 (February 18, 2000), AT&T at 3-5 (February 18, 2000), and Bell Atlantic at 6-7 (February 18, 2000)

the vertical structure of the Internet.”⁴ Their general conclusion was that “[T]he proposed merger of WorldCom and MCI will adversely affect competition in the core Internet backbone market.”⁵ Besen, et al., argued that the merger would give the combined firm the incentive and ability to profitably raise the price of interconnection to its network and to degrade interconnection with other Internet backbones.⁶ Dr. Besen has been retained by MCI WorldCom and Sprint to provide economic analysis in this matter. However, Dr. Besen’s current analysis on behalf of MCI WorldCom and Sprint does not address Internet backbone issues. His current analysis has been focused on antitrust issues relating to the long-distance businesses of MCI WorldCom and Sprint.⁷ The analysis and conclusions of Besen, et al., in MCI/WorldCom conducted on behalf of Sprint two years ago directly contradict the analysis and conclusions that Professor Economides has conducted on behalf of Sprint and MCI WorldCom in this matter.

8. My analysis of (a) market definition; (b) market shares and concentration; and (c) likely competitive effects resulting from the proposed MCI WorldCom/Sprint merger are presented in detail in this declaration. My conclusions are consistent with the economic theory and evidence presented in the MCI/WorldCom case and contained in the decisions of the EC, DOJ, and the FCC. I describe in this declaration the logic of the economic theory and evidence reflected in those decisions as well as in the arguments presented by opponents of the merger.

³ See “An Economic Analysis of the Impact of the WorldCom-MCI Merger on the Provision of Internet Backbone Services,” April 7, 1998.

⁴ Id., p.1.

⁵ Id., p. 27.

⁶ Id., p. 27.

⁷ See Declarations of Stanley M Besen and Steven R. Brenner submitted to the FCC on November 17, 1999 and March 20, 2000.

9. Professor Economides does not even acknowledge the prior MCI/WorldCom case in his Declaration. That is an important oversight, because the key conclusions reached by the competition authorities in MCI/WorldCom either directly contradict the economic testimony of Professor Economides on behalf of MCI WorldCom/Sprint or are not addressed by him.

IV. Professor Economides Makes the Same Arguments That Were Rejected by the Competition Authorities in the MCI/WorldCom Case

10. MCI and WorldCom retained Dr. Dennis Carlton and Dr. Hal Sider to provide economic analyses of the antitrust issues raised by the proposed MCI/WorldCom merger including issues relating to the provision of Internet backbone services. Drs. Carlton and Sider submitted declarations to the FCC on January 25, 1998 (Carlton/Sider Declaration I) and March 19, 1998 (Carlton/Sider II). The Calton/Sider declarations presented essentially the same arguments that Professor Economides now makes.
11. Professor Economides argues that three conditions are required if “network externalities [are] to affect market structure by creating a bottleneck”:⁸ (1) proprietary standards; (2) customers don’t need to buy services from more than one proprietary network; and (3) customers “cannot change providers easily and cheaply.” Professor Economides then argues that the “Internet fails to fulfill any of the three necessary conditions under which a network may be able to leverage network externalities and create a bottleneck.”⁹ Drs. Carlton/Sider made these same arguments two years ago. They argued that the key economic characteristics of the Internet would make it very difficult for firms to exercise market power. They argued that two of the key characteristics were the use of

⁸ Economides Declaration, ¶20.

non-proprietary interconnection standards on the Internet and demand by customers to have access to all sites on the Internet.¹⁰ They also argued that ISPs could readily switch backbone providers if MCI/WorldCom attempted to raise interconnection rates.¹¹

12. Professor Economides argues that raw transport capacity is readily available and that entry into the provision of backbone services is easy.¹² He cites data from *Boardwatch Magazine* which he claims illustrate significant and growing Internet backbone competition.¹³ Drs. Carlton/Sider made very similar arguments in MCI/WorldCom.¹⁴ To support their argument that entry was easy, they cited the expansion of underlying fiber capacity and statistics from *Boardwatch Magazine* showing increases in backbone providers.
13. Professor Economides claims that MCI WorldCom/Sprint could not profitably raise price or raise rivals' costs by degrading interconnections.¹⁵ He argues that if MCI WorldCom/Sprint attempted to raise price to all backbone providers, the affected ISPs could make that price increase unprofitable by routing traffic directly to each other rather than through MCI WorldCom/Sprint.¹⁶ In his discussion of degrading interconnection, Professor Economides describes several possible strategies, concluding in each case that any attempt by MCI/WorldCom

⁹ Economides Declaration, ¶21.

¹⁰ Carlton/Sider Declaration II, ¶78.

¹¹ Carlton/Sider Declaration II, ¶81.

¹² Economides Declaration, ¶¶55-61.

¹³ Economides Declaration, ¶45, ¶60.

¹⁴ Carlton/Sider Declaration I, ¶¶59-70 and Carlton/Sider Declaration II, ¶78, ¶¶88-93.

¹⁵ Economides Declaration, ¶¶66-102.

¹⁶ Economides Declaration, ¶¶72-76.

to degrade interconnection would not be profitable.¹⁷ Drs. Carlton/Sider similarly argued that if MCI/WorldCom attempted to raise price above competitive levels, “various ISPs could form a ‘subnetwork’ and aggregate their traffic,” thereby reducing their reliance on MCI/Worldcom.¹⁸ And Drs. Carlton/Sider opined that degradation strategies are unlikely because MCI/WorldCom would lose more than it would gain.¹⁹

14. In summary, the key arguments that Professor Economides now makes are a repetition of the key arguments that Drs. Carlton/Sider made on behalf of MCI/WorldCom two years ago.²⁰ These arguments were not sufficient to deter the competition authorities in 1998 from opposing the acquisition of the MCI Internet backbone business by WorldCom, nor, as is discussed in more detail below, should they be sufficient in the context of the present merger.

V. Peering and Transit

15. There is a hierarchy of Internet providers. At the top of the hierarchy are large nationwide and worldwide backbone providers with settlements-free private peering agreements. The second tier consists of nationwide backbone providers that pay transit fees or “paid-for” private peering. The next segment consists of

¹⁷ Economides Declaration, ¶¶78-102.

¹⁸ Carlton/Sider Declaration II, ¶80.

¹⁹ Carlton/Sider Declaration II. ¶¶83-87.

²⁰ Dr. Economides argues that ISPs and end users can use multihoming to evade the attempted exercise of market power. See ¶¶51-53, ¶¶100-101. Drs. Carlton/Sider argued that ISPs could readily reconfigure their networks to avoid anticompetitive price increases (¶¶80-82), and MCI/WorldCom, in an ex parte presentation dated March, 13, 1998, argued that multihoming was “easy” for ISPs and end users. See p. 10.

regional backbone providers and the bottom segment in the vertical-chain are Internet access providers that purchase connectivity for their retail customers.²¹

16. Internet backbone providers also sell connectivity to web sites and to dedicated corporate access customers.
17. When nationwide backbones interconnect on a settlements-free private peering basis it may be because the interconnecting networks are comparable in size in terms of the amount of traffic exchanged and the size of their networks as measured by geographic scope and bandwidth.²² Nationwide backbones may also agree to peer with smaller networks for historical, strategic or other special reasons.
18. National backbones also enter into “paid-for” private peering agreements and transit agreements when networks are of different sizes in terms of the amount of traffic exchanged and/or in terms of the geographic scope and bandwidth of the interconnecting networks.²³ In a private peering agreement, whether “paid-for” or settlements-free, traffic is not transported outside of the two networks. In a transit agreement, the network seeking transit pays the national backbone to deliver its originating traffic to the final destination whether that destination is on the national backbone providing transit or some other network.

²¹ Affidavit submitted by Rose Klimovich to the FCC on behalf of AT&T in Sprint/MCI WorldCom, ¶7. (Klimovich Affidavit) Ms. Klimovich is Director-Global Internet Network Services for AT&T.

²² Klimovich Affidavit, ¶6. Tier 1 providers are regarded by Ms. Klimovich as “U.S. nationwide (or worldwide) Internet backbones, which provide nationwide Internet services using extensive owned or leased fiber facilities. They generally have settlements-free private peering connections with the other Tier 1 national backbone providers. MCI WorldCom and Sprint are among the Tier 1 national backbone providers.” ¶7.

²³ Klimovich Affidavit, ¶9.

19. Settlements-free private peering is much more commercially advantageous than “paid-for” private peering or transit.

Having private peering relationships with Tier 1 networks is absolutely critical for any IBP [Internet backbone provider]. Many large business customers issuing Requests for Proposals (RFPs) have insisted that IBPs bidding for their business have a specified volume of private peering (both number of points and size of interconnections) with particular Tier 1 Internet backbone networks. Some customers have informed AT&T that this requirement was included as a result of marketing efforts of major IBPs who stressed the added reliability of private peering interconnection. This is also important as we begin to roll out services that need cross-provider Service level Agreements (“SLAs”) and/or Quality of Service (“QoS”) agreements. These agreements are often demanded by customers to improve their end-to-end performance.²⁴

20. Networks with settlements-free private peering agreements have a competitive advantage over networks with “paid-for” private peering agreements. A network with a “paid-for” private peering agreement “cannot represent to its customers that it has a private peering relationship. This significantly hampers its ability to compete with those that do have settlements-free private peering relationships.”²⁵ Thus, Internet backbones without settlements-free private peering may not provide a significant competitive constraint on Internet backbones with established peering agreements.
21. Notwithstanding published price lists and conditions for peering, the largest Internet backbones may refuse to peer or delay peering for strategic reasons and refuse to peer where absolute traffic volumes are low even though the relative amounts of traffic to be exchanged are roughly equal. The largest backbones often determine the conditions for interconnection vis-a-vis smaller backbones.

²⁴ Klimovich Affidavit, ¶8.

²⁵ Klimovich Affidavit, ¶9.

22. If the market for national backbone services is competitive, transit and “paid-for” private peering fees will likely be priced at competitive levels. The presence of transit and paid-for private peering are not necessarily indicative of the exercise of market power. A network with market power, however, could use that market power to raise transit fees and fees for paid-for private peering above competitive levels. A network with market power could also terminate settlements-free private peering agreements with other networks and begin charging “paid-for” private peering fees or transit fees to those networks.
23. One of the key antitrust issues raised by the proposed merger is whether the merged entity will be able to exercise market power by terminating settlements-free private peering and raising transit fees and fees for paid-for private peering above competitive levels. “[MCI WorldCom/Sprint] will control so much of the Internet traffic that it could force other IBP’s, including those currently considered Tier 1 IBPs, to buy transit from it or pay for MCI WorldCom’s costs of interconnection (e.g., other IBP’s, including AT&T, will likely be required to pay the costs of all the connections with MCI WorldCom).”²⁶

VI. Market Definition

A. DOJ/FTC Merger Guidelines

24. The Horizontal Merger Guidelines of the U.S. Department of Justice and the Federal Trade Commission (Guidelines) set out the methodology that these Agencies follow when analyzing the competitive effects of a merger.²⁷ “The unifying theme of the Guidelines is that mergers should not be permitted to create

²⁶ Klimovich Affidavit, ¶2.

²⁷ Issued April 2, 1992 and revised April 8, 1997.

or enhance market power or facilitate its exercise.”²⁸ The competitive effects of a merger are evaluated within the context of a properly defined product and geographic market or markets.²⁹

25. Once the relevant market has been properly defined, market shares can be calculated and the impact of the merger on concentration can be determined. If the merger would cause a significant increase in concentration, the agencies proceed to evaluate the competitive effects of the merger within the relevant market.³⁰

B. DOJ’s Analysis of the Relevant Market in MCI/WorldCom

26. In its investigation of the proposed MCI/WorldCom merger DOJ “talked to competitors, customers, industry experts, and the parties.”³¹ Based on its investigation, DOJ identified a “loose hierarchy of Internet connectivity.”

[W]e learned that the providers of Internet connectivity could be classified as a loose hierarchy broken down into roughly four tiers. At the top are nationwide (or worldwide) Internet backbones, which provide nationwide Internet services using extensive owned or leased fiber facilities. They generally have peering arrangements or private peering connections with the other national backbone providers and are “transit-free,” so they do not have to rely on transit agreements. UUNET (owned by WorldCom) and iMCI are examples of these large national backbone providers. The second group of providers are national Internet backbone networks that use facilities leased from underlying fiber telecommunications providers,

²⁸ Guidelines, §0.1.

²⁹ Guidelines, §1.0.

³⁰ Guidelines, §1.51. Sections 2-5 cover the following subjects: §2: Potential adverse competitive effects of the merger through coordinated interaction and/or unilateral effects; §3: Entry analysis; §4: Efficiencies; and §5: Failure and exiting assets.

³¹ “Network Effects in Telecommunications Mergers: MCI WorldCom Merger: Protecting the Future of the Internet,” address by Constance K. Robinson, Director of Operations and Merger Enforcement, Antitrust Division, U.S. Department of Justice, before the Practicing Law Institute, San Francisco California, August 23, 1999, p. 7. (Robinson Address)

but which pay transit fees to one or more national backbone providers. A third group comprises the Regional or local ISP Internet connectivity providers, which lease some regional or local network fiber facilities and equipment and interconnect with other small providers at the public NAPs make up another category. They typically purchase transit backbone services from any of the national backbone providers. The last group is made up of ISPs that do not have a network, but instead rely on others for wholesale Internet connectivity services. Small "Mom & Pop" ISPs are typical of this type."³²

27. DOJ concluded that there was a "national backbone market."³³ In addition, "[t]he EU and the FCC both determined that there was a national backbone market. The parties, on the other hand, argued that the market was considerably broader and included all participants in the provision of Internet access and, since the underlying fiber facilities are the same, all voice telecommunications."³⁴ (emphasis in original)
28. DOJ concluded that regional or local Internet networks were not in the relevant market.

Smaller regional backbone networks would not be adequate substitutes after the merger, because they would be dependent on MCI/WorldCom for Internet connectivity. Without MCI/WorldCom, the smaller networks would be unable to offer customers sufficient connectivity to all sources of content on the Internet.³⁵

³² Robinson Address, pp. 6-7. This hierarchical division was "not universally accepted" or "perfect," but provided "a useful conceptual framework in describing key differences between the major players and how they were related." Id. n. 12.

³³ Robinson Address, p 7.

³⁴ Robinson Address, footnote 13.

³⁵ Robinson Address, p. 7.

C. The EC's Analysis of the Relevant Market in MCI/WorldCom

29. The EC's market definition was the provision of "universal connectivity" by "top level" Internet backbone networks,³⁶ which is quite similar in concept to the market definitions adopted by DOJ and the FCC.
30. Three levels of ability to provide connectivity were delineated by the EC. The top level backbones were defined as the only networks capable of delivering universal connectivity on their own account. Secondary peering ISPs deliver connectivity through peering arrangements that are supplemented with transit. Resellers depend on the first two categories to provide connectivity by simply reselling it.³⁷ The EC concluded that price increases by the top-level networks for their connectivity services could not be constrained by either resellers or secondary peering ISPs.³⁸ The latter, in particular, would not be an effective substitute that could constrain price increases for top level services because (a) their cost base reflects some need to buy transit from top level networks; (b) top level networks could turn present peering relationships into transit interconnections if secondary networks launched a competitive challenge; (c) any attempt by secondary peering ISPs (or other ISPs) to undermine a price increase by diverting traffic through reconfiguring networks of secondary peering ISPs would be unlikely to succeed because of high transaction and investment costs relative to network size; and (d) in any event, such a network of secondary peering that did not include direct connections to the largest networks would not be a viable alternative provider of universal connectivity.³⁹

³⁶ EC Decision in WorldCom/MCI, Case IV/M.1069, 8 July 1998, ¶70 (EC Decision)

³⁷ EC Decision, ¶65.

³⁸ EC Decision, ¶68.

³⁹ EC Decision, ¶¶75-76.

D. The FCC's Analysis of the Relevant Market in MCI/WorldCom

31. The FCC was "inclined to agree" that the relevant product market was "the transporting and routing of packets between and among ISPs and regional backbone networks" and that the relevant geographic market was "nationwide."⁴⁰

E. Analyses by Third Party Economists of the Relevant Market in MCI/WorldCom

32. The economic analysis presented by third parties in MCI/WorldCom defined the product market as the provision of "core Internet backbone services"⁴¹ This market definition is based on the fact that the provision of seamless Internet connectivity is only provided by a select group of core backbone providers who interconnect with each other without settlement fees, but charge interconnection fees to non-core backbone providers for these services. According to this analysis, core backbone services are an essential input, with no close substitutes, that are used by all non-core backbone suppliers and ISPs to provide universal connectivity to customers.⁴² As such, a hypothetical monopolist over core backbone services would be able to raise the price of these services to non-core backbone providers.⁴³ Thus, Besen et al., which were retained by Sprint in the MCI/WorldCom matter, found "core" backbone services to be a relevant market.

⁴⁰ FCC Memorandum Opinion and Order in MCI/WorldCom, Docket No. 97-211, Released September 14, 1998, ¶148 (FCC Opinion)

⁴¹ See, for example, Besen, et al., on behalf of Sprint at 7-9. Dr. Harris on behalf of GTE refers to a market for "Internet backbone service," at 7 ("Internet Affidavit of Robert G. Harris," March 13, 1998). Dr. Harris also submitted a second Internet Affidavit on June 8, 1998. Crémer, et al., on behalf of GTE discuss a market for "backbone traffic," at 5 ("The degradation of quality and the domination of the Internet," Jacques Crémer, Patrick Rey, and Jean Tirole, April 21, 1998).

⁴² Besen, et al., pp. 2 and 7

⁴³ Besen, et al., p. 2.

F. Definition of the Relevant Market in MCI WorldCom/Sprint

33. Market definition is based on the concept of the ability of a hypothetical monopolist of a proposed market to raise price by a small but significant amount for a non-transitory period of time. Based on this standard, it is my opinion that the relevant product market could conservatively be described as a national backbone market served by nationwide backbones. Less than nationwide providers would not be included in this relevant market. Alternatively, it may be reasonable to narrow the relevant market to a national backbone market served by a “core” set of nationwide backbones. Core backbones generally peer on a settlements-free basis and include the networks with the largest physical facilities as well as the largest customer bases. Non-core providers would probably be unable to constrain the pricing of a hypothetical monopolist of core Internet backbone services to competitive levels. The relevant geographic market is at least the U.S. and may be world-wide.

G. Professor Economides Does Not Define a Relevant Market

34. In his declaration, Professor Economides does not define a relevant market. He provides no explanation for this omission. He refers to providers of Internet backbone services in his declaration, but makes no attempt to delineate the boundaries of an Internet backbone market. He does not analyze whether local and regional Internet backbone providers should be in the same relevant market as national (or world-wide) Internet backbone providers. He even suggests that there may not even be an Internet backbone market.⁴⁴
35. In lieu of market definition analysis, Professor Economides argues that differences in network size, traffic flows or payments have no competitive significance. He states that “the transport and routing that backbone networks

⁴⁴ Economides Declaration, ¶46.

offer do not necessarily differ depending on whether cash (transit) or barter (peering) is used for payment.⁴⁵ This is true, according to Professor Economides, because the choice between peering and transit is not a strategic one that affects the ability of different networks to compete in the provision of universal connectivity. Rather, Professor Economides claims, this choice is simply a consequence of the cost of carrying the mutual traffic within each network, which he claims depends mostly on the relative size of networks in terms of the extent of geographic coverage.⁴⁶

36. But even if Professor Economides is right that interconnection is currently cost-based, that does not mean that small and large networks are in the same relevant market, as Professor Economides seems to imply. Rather, small and large networks are in the same product market if customers consider them reasonably interchangeable. And, as recognized by the EC Decision in MCI/WorldCom, that is not the case with respect to small and large networks in this context. As the size of the largest network increases relative to the size of the smaller ones, the largest network is able to “behave to an appreciable extent independently of its competitors and customers.”⁴⁷ This independence stems from the nature of the Internet backbone service hierarchy. Contrary to the implications of Professor Economides’ analysis, and consistent with the economics literature and the EC Decision, the largest backbone networks need to be distinguished from other classes of providers who, because of their size, are not in a position to discipline a price increase by the largest networks. As such, the relevant product market is accurately described as the provision of national backbone services by nationwide backbones. As discussed above, the relevant market may be narrower, consisting

⁴⁵ Economides Declaration, ¶46.

⁴⁶ Economides Declaration, ¶¶40-43.

⁴⁷ EC Decision, ¶117.

of the provision of national backbone services by a “core” set of nationwide backbones who peer on a settlements-free basis.

VII. Market Shares

A. DOJ’s Calculation of Market Shares in MCI/WorldCom

37. DOJ determined that “[t]he national backbone market was highly concentrated, with several significant competitors including UUNET, iMCI, and Sprint.”⁴⁸ DOJ evaluated a number of market share measures. Post-merger, the combined share of MCI/WorldCom “for Internet connectivity ranged from 40-75%, depending on what market share was used.”⁴⁹ While stating that none of the market share measures was “perfect,” each “exhibited the same pattern. They all indicated that after the merger, MCI/WorldCom would be the dominant player in the market, and substantially larger than any other player.”⁵⁰

B. The EC’s Calculation of Market Shares in MCI/WorldCom

38. The EC determined that only those providers that had peering agreements with the top four backbones should be counted as “top tier” providers.⁵¹
39. Based on its market definition, the EC concluded that the merged entity would have between a 45% and 55% share of revenues in the relevant market which was consistent with the numerous other market share calculations based on differing

⁴⁸ Robinson Address, p. 7.

⁴⁹ Robinson Address, p. 7.

⁵⁰ Robinson Address, p. 8.

⁵¹ EC Decision, ¶103.

methodologies that the EC obtained in the course of its investigation.⁵² The EC concluded that “there is little doubt that the combined entity would hold over 50% of the market, however widely defined. The combined network would be [significantly larger than] (*) the size of its nearest competitor [Sprint] on either revenue or traffic flow, bearing in mind that the next competitor, the GTE group, is about half the size of Sprint.”⁵³ (items in brackets and parentheses in the original)

C. The Calculation of Market Shares in MCI WorldCom/Sprint

40. As was recognized in MCI/WorldCom, the precise measurement of market shares was a difficult task due to a lack of common reporting standards, among other things. Nonetheless, as seen above, there were a number of measurements using a variety of methodologies that led to a consistent conclusion: the merger of MCI and Worldcom’s Internet backbone businesses would have a market share of greater than 50%.
41. With respect to the proposed MCI WorldCom/Sprint merger, the same general pattern holds. MCI WorldCom is clearly the largest Internet backbone by a significant margin and Sprint is generally the second largest. Together, their combined share has been generally estimated in the 50% to 70% range. Several of the estimates are reviewed below. While there may be questions that could be raised concerning each of these measures, they present a consistent picture of a clearly dominant firm following the merger.
42. According to a Yankee Group analysis of the MCI WorldCom/Sprint merger, the merged firm would: (1) represent between 60% and 70% of the Internet backbone

⁵² For a discussion of these market share measurements and methodologies, see EC Decision, ¶¶88-114.

⁵³ EC Decision, ¶114.

market; (2) own and operate 6 of the 8 largest traffic exchange points on the public Internet; (3) maintain over 4,000 ISP backbone connections; and (4) create an unhealthy balance of power.⁵⁴

43. Bell Atlantic reported several post-merger share estimates in the 50% to 70% range in its FCC filing.⁵⁵
44. C&W estimated that MCI WorldCom had a 50% share of the world's Internet backbone traffic and Sprint's share was 18% in 1998.⁵⁶
45. Probe Research estimated that the combined U.S. wholesale revenue shares of MCI WorldCom and Sprint would be 51%.⁵⁷ The next largest firms were GTE at 19% and C&W at 10%.
46. Bloomberg News reports that "MCI WorldCom controls more than 50 percent of all Internet traffic, and Sprint handles 20 percent."⁵⁸

⁵⁴ "MCI WorldCom and Sprint Merger: Telecom Fusion: The World is Getting Smaller," Yankee Group, October 15, 2000, p. 11. (Yankee Group Report)

⁵⁵ Bell Atlantic FCC submission, February 18, 2000, p. 3: "two-thirds" combined share from iAdvance, O'Dwyer's PR Services Report (December 1999); "almost 70%" combined share from Network World at 51 (November 22, 1999); "MCI WorldCom carriers 'more than 50%'" combined share from Mergers and Acquisitions Journal (January 1, 2000). A *Boardwatch* combined share of 34% is also shown (December 1999). The *Boardwatch* figure measures the number of ISP connections to backbones, but not the value or size of the connections. Because MCI WorldCom has among the highest value connections (e.g., AOL, MSN, CompuServe, EarthLink), its share is greatly understated in terms of value. Also, MCI WorldCom's total number of connections in the December 1999 *Boardwatch* appears to be questionable, since it fell by almost 40% from the 1999 Annual Directory of Internet Service Providers published in May 1999. *Boardwatch* indicated in an e-mail that the market ranking shown in the December 1999 *Boardwatch* may be mostly accurate, but the actual number of ISP connections is not. Boardwatch said that the Annual Directory of Internet Service Providers has much more accurate data. The 1999 *Boardwatch* Annual Directory shows MCI Worldcom and Sprint with a combined share of 43% based on the number of ISP connections. MCI WorldCom and Sprint are the two largest backbones in terms of ISP connections in both the 1999 Annual Directory and the December 1999 *Boardwatch*.

⁵⁶ Senate Commerce Committee testimony by Mike McTighe, CEO of C&W Global Operations, November 8, 1999.

47. In order to determine which U.S. backbone to obtain transit services from, BT IP Services recently examined the number of routes advertised by each Internet backbone at the PAIX NAP. BT found that UUNET had a 33% share of the advertised routes and Sprint had a 31% share for a combined share of 64%. C&W had the next largest share at 11%.
48. This disparity in size as measured by output is consistent with the disparity in size as measured by capacity. "In the IP space, UUNET has over 2,000 POPs, 500 of which are outside the United States. This is bigger than any other IP network on the planet by at least a factor of 2 and is bigger by a factor of 4-5 than most of the IP backbones around the world."⁵⁹
49. UUNET also has a very large modem bank to serve on-line access providers like AOL. "WorldCom has 1.6M modem banks which is 4x the size of anyone else. In fact, the only other companies that are ever even in the game for AOL's business are [Level 3], [GTE], and [Sprint]."⁶⁰ UUNET and AOL recently agreed to extend UUNET's provision of dial-up access to AOL until 2004.⁶¹ UUNET provides dial-up service to AOL, with 22 million members, and a number of other leading but much smaller on-line access providers such as CompuServe (owned by AOL), Earthlink, and MSN. AOL is about 7 times larger than EarthLink, the second largest on-line access provider and has a share of almost 40% of the dial-

⁵⁷ Probe Research (1999).

⁵⁸ *Bloomberg News*, "Global unions ask EU to block MCI-Sprint merger," April 17, 2000.

⁵⁹ "WorldCom: Still a Cool Company," *Salomon Smith Barney*, February 7, 2000, p. 2.

⁶⁰ *Id.*, p. 2.

⁶¹ UUNET Press Release, April 6, 2000.

up Internet access business. AOL, Compuserve, Earthlink, and MSN have a combined share of more than 50% of the dial-up Internet access business.⁶²

D. Professor Economides Does Not Calculate Market Shares

50. Having failed to define a relevant market, Professor Economides is unable to calculate market shares or to determine the effects of the merger on concentration. Meaningful market shares can only be calculated in the context of a properly defined relevant market. Consequently, Professor Economides is unable to say what share the merged entity would have.
51. The theory of dominance and the ability to exercise market power in the provision of Internet backbone services depends crucially on the absolute and relative size of the dominant firm's market share based on the measure of its installed base. By failing to define a relevant market and calculate market shares, Professor Economides is unable to directly assess the competitive significance of the installed base of a combined MCI WorldCom/Sprint. The relative and absolute size of the installed base that would have resulted from the merger was a central issue in MCI/WorldCom as it is in this case.

VIII. Competitive Effects

52. The economic theory of the competitive harm from the combination of the MCI WorldCom and Sprint Internet backbones is relatively straightforward. Given the relative and absolute size of the combined MCI WorldCom/Sprint customer base, it is likely that the merged firm will be able to exercise market power.⁶³ In its

⁶² "Ranking Internet Providers by Size." www.jetcafe.org; Yankee Group Report, p. 14. Sprint owns 14% of EarthLink.

⁶³ Paul Milgrom, Bridger Mitchell, and Padmanabhan Srinagesh (Milgrom, et al.) recently presented a draft paper titled "Competitive Effects of Internet Peering Policies" to the Telecommunications Policy Research Conference in Arlington, VA, held September 25-27, 1999. The paper derived